

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An optical signal processor comprising:
a first diffraction grating device for diffracting incident light, the first diffraction grating having a diffracting surface arranged on a first reference plane inputted;
a second diffraction grating device for diffracting the light diffracted by the first diffraction grating device, the second diffraction grating device having a diffracting surface arranged on a second reference plane apart from and parallel to the first reference plane; and
first and second half-wave plates, disposed on an optical path between the first and second diffraction grating devices, having their respective optic optical axes disposed at an angle of 45 degrees in directions different from each other by 45 degrees.

2. (Cancelled)

3. (Original) An optical signal processor according to claim 1, wherein the first and second half-wave plates are arranged orthogonal to an optical axis of light having a center wavelength in a wavelength band in use.

4. (Currently Amended) An optical signal comprising:
a first diffraction grating device for diffracting incident light, the first diffraction grating device having a diffracting surface arranged on a first reference plane;
a second diffraction grating device for diffracting the light diffracted by the first diffraction grating device, the second diffraction grating device having a diffracting surface arranged on the first reference plane;

a mirror disposed on an optical path between the first and second diffraction grating devices, the mirror having a reflecting surface arranged on a second reference plane apart from and parallel to the first reference plane; and

first and second half-wave plates, disposed on an optical path between the first diffraction grating device and the mirror, or on an optical path between the second diffraction grating device and the mirror, having their respective optical axes disposed at an angle of 45 degrees from each other. ~~processor according to claim 1, wherein a mirror is disposed on the optical path between the first and second diffraction grating devices; and~~

~~wherein the first and second half-wave plates are disposed on an optical path between the first diffraction grating device and the mirror, or on an optical path between the second diffraction grating device and the mirror.~~

5. (Cancelled)

6. (Original) An optical signal processor according to claim 4, wherein the first and second diffraction grating devices are integrated with each other.

7. (Original) An optical signal processor according to claim 1, wherein the first and second diffraction grating devices have the same grating direction.

8. (New) An optical signal processor according to claim 4, wherein the first and second diffraction grating devices have the same grating direction.

9. (New) An optical signal processor according to claim 1, wherein each of the first and second diffraction grating devices is a reflection type diffraction grating device.

10. (New) An optical signal processor according to claim 1, wherein each of the first and second diffraction grating devices is a transmission type diffraction grating device.

11. (New) An optical signal processor according to claim 4, wherein each of the first and second diffraction grating devices is a reflection type diffraction grating device.

12. (New) An optical signal processor according to claim 4, wherein each of the first and second diffraction grating devices is a transmission type diffraction grating device.